UNIVERSITY of GUELPH
KEMPTVILLE CAMPUS

CHANGING LIVES
IMPROVING LIFE

# NLARS

## *New Liskeard Agricultural Research Station*

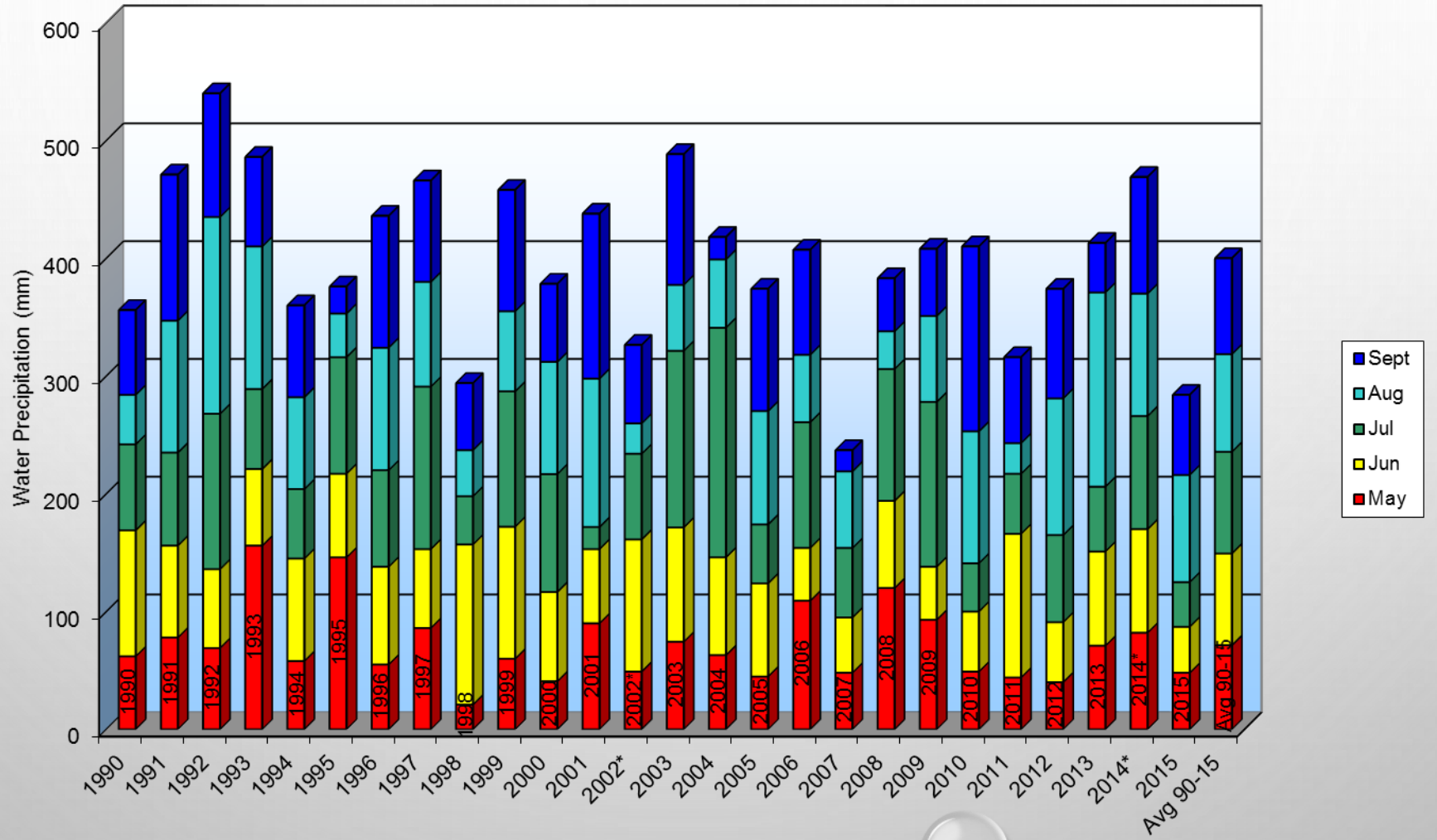
## 2015

John Kobler
Agronomy Technician

# $H_2O$ 2015

**Accumulated Precipitation**

New Liskeard Agricultural Research Station

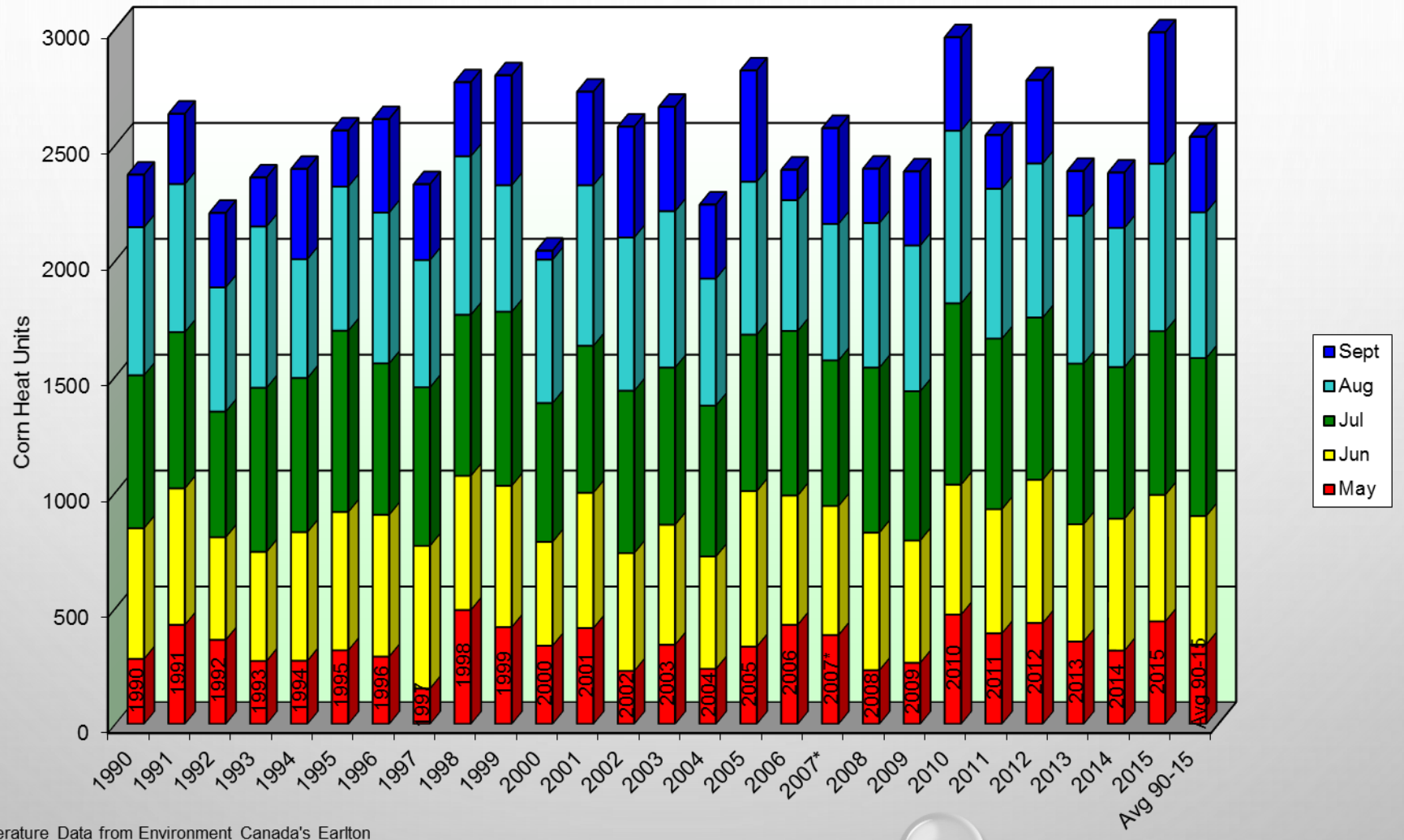



* Precipitation Data from Environment Canada's Earlton Airport Site

# CHU 2015

**Accumulated Corn Heat Units**

New Liskeard Agricultural Research Station




* Temperature Data from Environment Canada's Earlton

# Comparison with Farmzone

New Liskeard Agricultural Research Station

***Weather Records for NLARS***

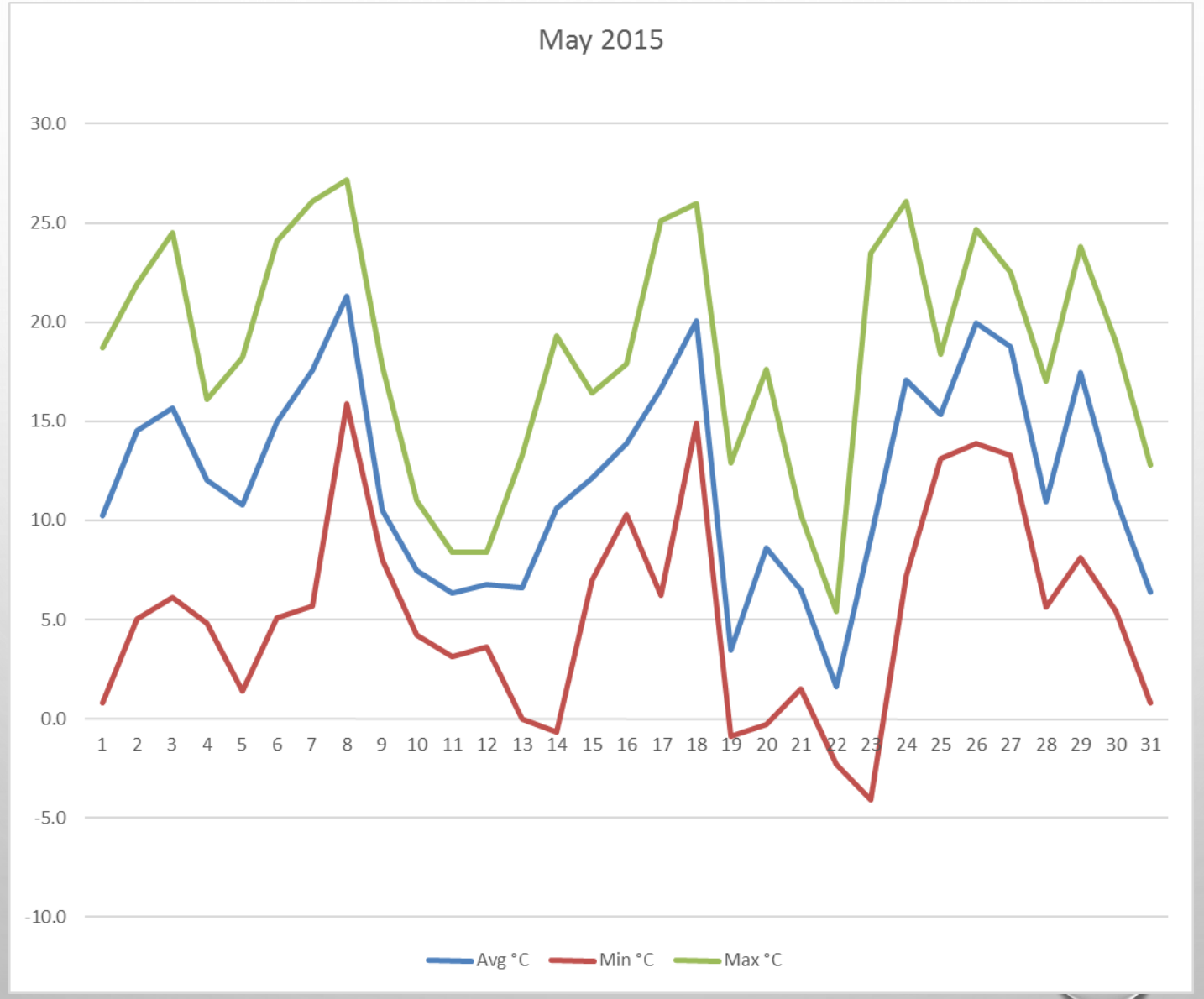
## *Summary 2015*

| Month | Air Temperature | | | Precip (mm) | Growing Degree Days (5C) | Corn Heat Units (CHU) |
|---|---|---|---|---|---|---|
| | Avg °C | Min °C | Max °C | | | |
| May | 13 | -5 | 30 | 48 | 256 | 443 |
| June | 17 | 0 | 30 | 39 | 329 | 546 |
| July | 21 | 4 | 37 | 38 | 475 | 706 |
| August | 19 | 8 | 33 | 91 | 452 | 723 |
| September | 17 | -1 | 30 | 68 | 351 | 566 |
| **Total** | | | | **284** | **1863** | **2984** |

(Comparsion with Farmzone.com)

| Month | Air Temperature | | | Precip (mm) | Growing Degree | Corn Heat Units |
|---|---|---|---|---|---|---|
| | Avg °C | Min °C | Max °C | | | |
| May | 12 | -4 | 27 | 53 | 207 | 315 |
| June | 15 | 0 | 26 | 26 | 249 | 408 |
| July | 18 | 5 | 33 | 46 | 391 | 617 |
| August | 18 | 8 | 30 | 83 | 354 | 571 |
| September | 15 | -1 | 28 | 66 | 308 | 487 |
| **Total** | | | | **274** | **1509** | **2398** |

# Late Spring Frost



# NLARS Highlights

- New Liskeard became an official site for Soybean Performance via OSACC
- Purchased a Foss 1241 Protein Analyzer
- No Canola Performance experiment this year
- Alternative crops – Buckwheat, Faba Beans, Malting Barley
- Corn Variety Trial
- Intensive Oat Management IOM

# OSACC Soybean Performance 2015

- 28 Soybean RR entries
- Seeded **14-May-15**
- Fully emerged and survived -2.8°C Frost (May22)
- Ultra Soybean 2100-2300 HU
- **All varieties achieved maturity before frost**
- Harvest **6-Oct-2015**

GoSoy.ca

OSACC Soybean
Ontario Soybean And Canola Committee



## Download
## 2015 Ontario Soybean Variety Trials Publication
## (Revised December 9, 2015)

This Research was conducted and reported by:

University of Guelph
* Ontario Agricultural College
* Ridgetown Campus
* Kemptville Campus

Agriculture & Agri-Food Canada
* Harrow - GPCRC
* Ottawa - ECORC

Ontario Ministry of Agriculture, Food and Rural Affairs

## TABLE 2.1a AGRONOMIC DATA AT MATURITY GROUP 00 (2100-2300 HU) AREAS , RR TEST

| Variety | Days to Mature | NEW LISKEARD Yield Index 1 year | Plant Height (cm) | Lodging 1=standing 5=flat |
|---|---|---|---|---|
| P001T34R | 113 | 72 | 47 | 1.0 |
| P002T04R | 113 | 85 | 62 | 1.0 |
| S0009-M2 | 114 | 92 | 68 | 1.0 |
| NSC Moosamin | 116 | 84 | 55 | 1.0 |
| NSC Libau RR2Y | 119 | 98 | 65 | 1.0 |
| Mahony R2 | 120 | 104 | 72 | 1.0 |
| PS 0035 NR2 | 120 | 98 | 76 | 1.0 |
| Mcleod R2 | 122 | 104 | 71 | 1.0 |
| 22-60RY | 124 | 102 | 58 | 1.0 |
| Notus R2 | 124 | 93 | 60 | 1.0 |
| Kendo R2 | 126 | 96 | 75 | 1.0 |
| Pekko R2 | 126 | 98 | 69 | 1.0 |
| P006T78R | 127 | 93 | 60 | 1.0 |
| PS 0055 R2 | 128 | 103 | 69 | 1.0 |
| Podaga R2 | 129 | 101 | 76 | 1.0 |
| Vito R2 | 129 | 99 | 79 | 1.0 |
| Hydra R2 | 130 | 105 | 79 | 1.0 |
| PRO 2525R2 | 130 | 107 | 74 | 1.0 |
| S007-Y4 | 130 | 110 | 67 | 1.0 |
| Sampsa R2 | 130 | 108 | 62 | 1.0 |
| NSC Jaden RR2Y | 132 | 114 | 78 | 1.0 |
| Lono R2 | 133 | 108 | 71 | 1.0 |
| Currie R2 | 135 | 107 | 71 | 1.0 |
| Astro R2 | 138 | 119 | 78 | 1.0 |
| Average yield (T/ha) | | 3.23 | | |
| (bu/ac) | | 47.8 | | |

| Testing Locations: Table 2.1a | |
|---|---|
| New Liskeard | 2015 |

| Entry | Code | Variety | Grain | |
|---|---|---|---|---|
| | | | kg/ha | bu/ac |
| 7 | CFDQ | Akras R2 | 3936.2 | 58.5 |
| 6 | SPIQ | Astro R2 | 3900.1 | 58.0 |
| 9 | SYNS | S007-Y4 | 3649.5 | 54.3 |
| 5 | PROS | PRO 2525R2 | 3583.3 | 53.3 |
| 1 | CFDQ | NSC Jaden RR2Y | 3546.1 | 52.7 |
| 3 | CFDQ | Sampsa R2 | 3540.7 | 52.6 |
| 10 | CFDQ | CFS13.2.01 R2 | 3529.7 | 52.5 |
| 22 | SECN | Mahony R2 | 3507.4 | 52.2 |
| 23 | SECN | Mcleod R2 | 3469.0 | 51.6 |
| 17 | PRID | PS 0055 R2 | 3454.6 | 51.4 |
| 11 | CFDQ | CFS13.3.01 R2 | 3426.4 | 50.9 |
| 16 | DEKB | 22-60RY | 3407.5 | 50.7 |
| 13 | NGEN | NSC Libau RR2Y | 3341.5 | 49.7 |
| 8 | CFDQ | CFS12.5.01 R2 | 3327.5 | 49.5 |
| 12 | PRID | PS 0035 NR2 | 3326.9 | 49.5 |
| 24 | NGEN | NSC Sanford RR2 | 3293.1 | 49.0 |
| 21 | SECN | Currie R2 | 3178.3 | 47.3 |
| 2 | CFDQ | Pekko R2 | 3170.8 | 47.1 |
| 14 | SPIQ | Kendo R2 | 3131.7 | 46.6 |
| 18 | CFDQ | Notus R2 | 3076.6 | 45.7 |
| 4 | SPIQ | Vito R2 | 3025.3 | 45.0 |
| 28 | PION | PH14002 | 2923.4 | 43.5 |
| 19 | SYNS | S0009-M2 | 2861.0 | 42.5 |
| 15 | NGEN | NSC Moosamin | 2841.1 | 42.2 |
| 30 | | Montcalm | 2741.1 | 40.8 |
| 29 | | Montcalm | 2709.7 | 40.3 |
| 20 | SYNS | X2R00451 | 2701.5 | 40.2 |
| 25 | NGEN | NSC Watson RR2Y | 2556.1 | 38.0 |
| 27 | PION | P002T04R | 2475.0 | 36.8 |
| 26 | PION | P001T34R | 2128.9 | 31.7 |

# Corn Variety Performance 2015

# Corn Variety Performance 2015

- 18 Corn Varieties
- Seeded 6-May-2015
- 150N Preplant + 200 kg/ha (8-32-16) banded with corn
- Converge Pro 220 ml/ha + Converge 480 2.22L/ha
- 2 L/ha Roundup
- Harvest Date 21-Oct-2015

# Corn Variety Performance 2015

| Entry | Company | CHU | Variety | Grain Yield | | Harvest |
|---|---|---|---|---|---|---|
| | | | | kg/ha | bu/acre | Moisture % |
| 18 | DAS | 2525 | 8166 RA | 11051.6 | 176.1 | 26.9 |
| 14 | DAS | 2300 | X13002S2 | 10650.7 | 169.7 | 24.5 |
| 8 | Pioneer | 2500 | P8387 AM | 10160.9 | 161.9 | 25.6 |
| 1 | Elite | 2225 | E47A12R | 10134.1 | 161.5 | 23.6 |
| 9 | Pioneer | 2000 | P7332 R | 10097.5 | 160.9 | 24.5 |
| 6 | Pioneer | 2300 | P7958 AM | 10094.4 | 160.8 | 24.1 |
| 7 | Pioneer | 2225 | P7632 AM | 9927.2 | 158.2 | 27.6 |
| 4 | Pickseed | 2350 | PS-SilExVT3P RIB | 9870.0 | 157.2 | 25.8 |
| 17 | DAS | 2300 | 4093 | 9839.4 | 156.8 | 24.7 |
| 5 | Pioneer | 2050 | P7211 HR | 9652.8 | 153.8 | 22.9 |
| 11 | Pride | 2250 | A4025G3 RIB | 9617.7 | 153.2 | 22.2 |
| 16 | DAS | 2300 | 3093 | 9486.9 | 151.1 | 25.1 |
| 12 | Pride | 2175 | A4199G2 RIB | 9470.3 | 150.9 | 25.2 |
| 3 | Pickseed | 2200 | PS-2263VT2P RIB | 9429.5 | 150.2 | 25.8 |
| 15 | DAS | 2275 | 3085 | 9287.3 | 148.0 | 26.5 |
| 13 | Pride | 2300 | A4415G2 RIB | 9077.0 | 144.6 | 25.2 |
| 2 | Elite | 2150 | E46J77R | 8984.2 | 143.1 | 24.1 |
| 10 | Dekalb | 2075 | DKC23-22RIB | 8392.6 | 133.7 | 24.0 |

# Oat Lodging Issues of 2014

# Intensive Oat Management 2015

## Objective:

To evaluate the response of additional high management practices on the milling quality of Northern Ontario grain oats. Management practices include increasing levels of nitrogen applied at planting and with a level of additional nitrogen applied at flag leaf stage. Syngenta growth regulator to be used on higher rates of nitrogen. Comparison of fungicide treatment to non-fungicide treatment.

# Intensive Oat Management 2015

## Treatments:

*Nitrogen Rates:*

1. 0N
2. 60N
3. 60N + 30N @ flag leaf
4. 90N

*Varieties:*

1. Dieter
2. Morrison
3. Camden

# Intensive Oat Management 2015

## Treatments:

*Growth Regulator*

1. No growth Regulator
2. With growth Regulator (Syngenta - Palisade)
3. Growth Regulator (EngageAgro – Manipulator

*Fungicide:*

1. No fungicide
2. Twinline fungicide 0.5 L/ha applied at flag leaf stage.

4 x 3 x 3 x 2 = 72 treatments x 3 reps = 216 plots

# Intensive Oat Management 2015

Northern Ontario Farm Innovation Alliance

QUAKER

BASF
We create chemistry

University of Guelph
Changing Lives Improving Life

Grain Farmers of Ontario

ENGAGE AGRO

syngenta

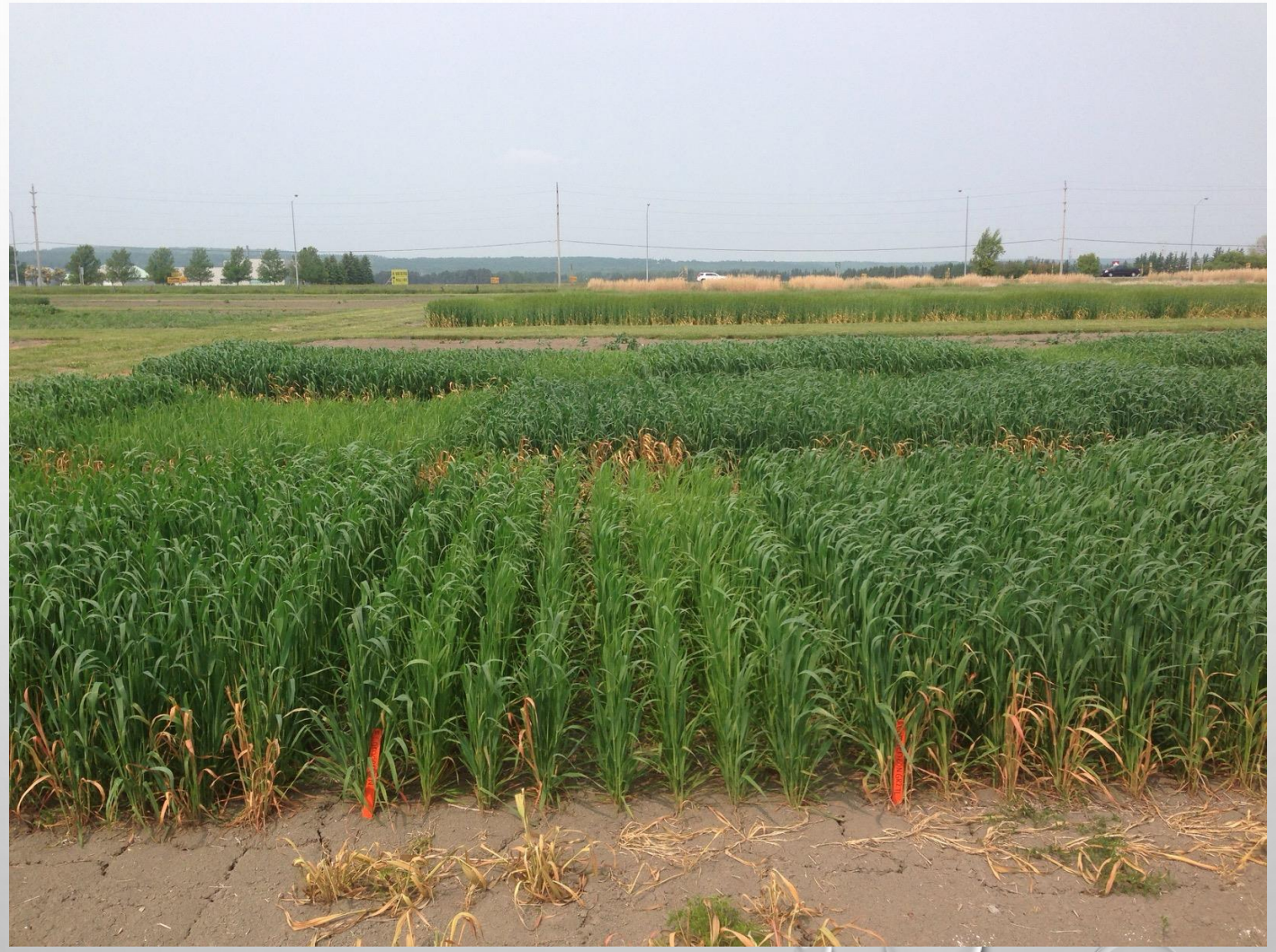
CANTERRA SEEDS

SeCan
Canada's Seed Partner

# Intensive Oat Management 2015

# Intensive Oat Management 2015

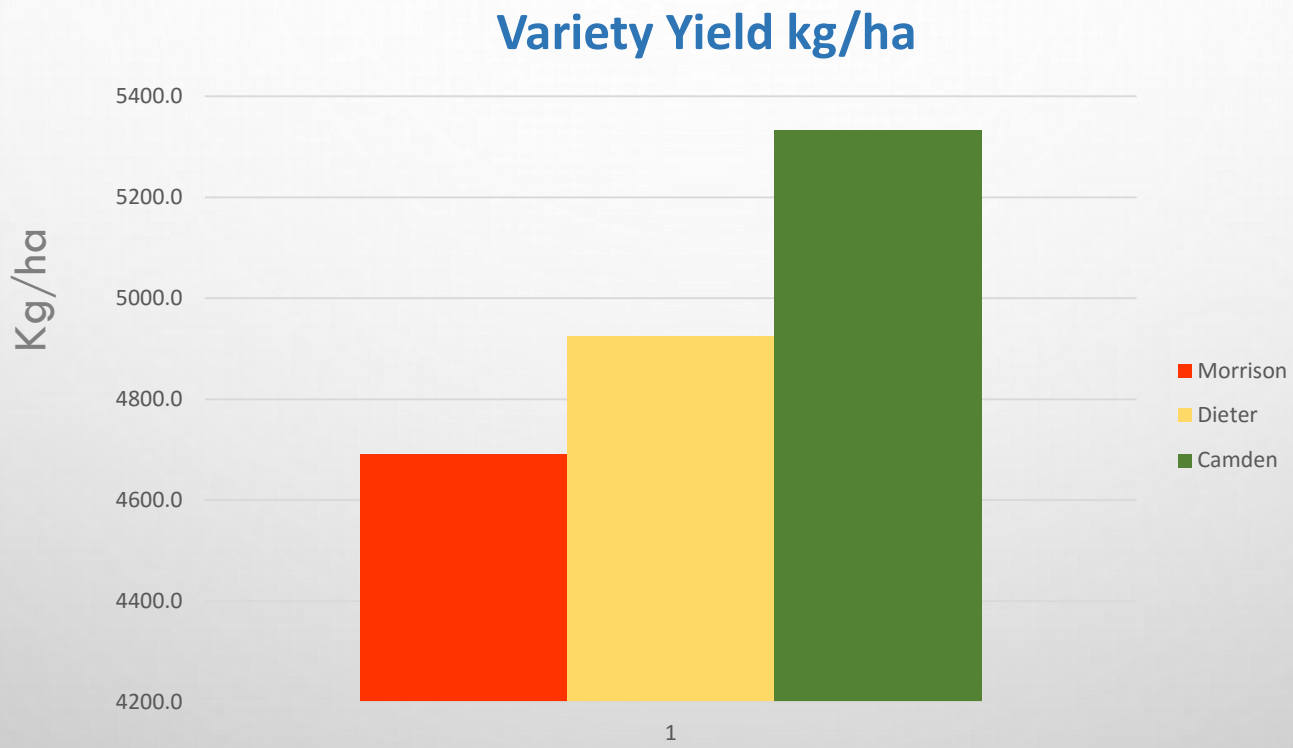
# Intensive Oat Management 2015



# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| ***Variety*** | | | | | | | | | |
| 1 Dieter | 4924.1 | 36.5 | 46.7 | 10.9 | 106 | 5.5 | 2.9 | 65 | 96 |
| 2 Morrison | 4690.6 | 33.0 | 46.7 | 11.6 | 90 | 3.0 | 2.6 | 65 | 89 |
| 3 Camden | 5332.2 | 37.5 | 45.1 | 11.0 | 91 | 2.4 | 2.4 | 65 | 96 |
| Probability <= 0.05 | 0.0055 | 0.0003 | 0.0987 | 0.0111 | | | | | |

# Intensive Oat Management 2015



# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| ***N-Rate*** | | | | | | | | | |
| 1 0N | 3970.6 | 36.1 | 46.9 | 10.2 | 87 | 1.1 | 0.3 | 66 | 93 |
| 2 60N | 5153.9 | 35.0 | 46.2 | 11.1 | 99 | 4.6 | 3.3 | 65 | 94 |
| 3 60N+30N at flag leaf | 5410.7 | 36.3 | 46.1 | 11.9 | 98 | 3.6 | 2.5 | 65 | 94 |
| 4 90N | 5393.9 | 35.3 | 45.6 | 11.5 | 100 | 5.3 | 4.4 | 65 | 94 |
| Probability <= 0.05 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | | |

# Intensive Oat Management 2015

# Intensive Oat Management 2015

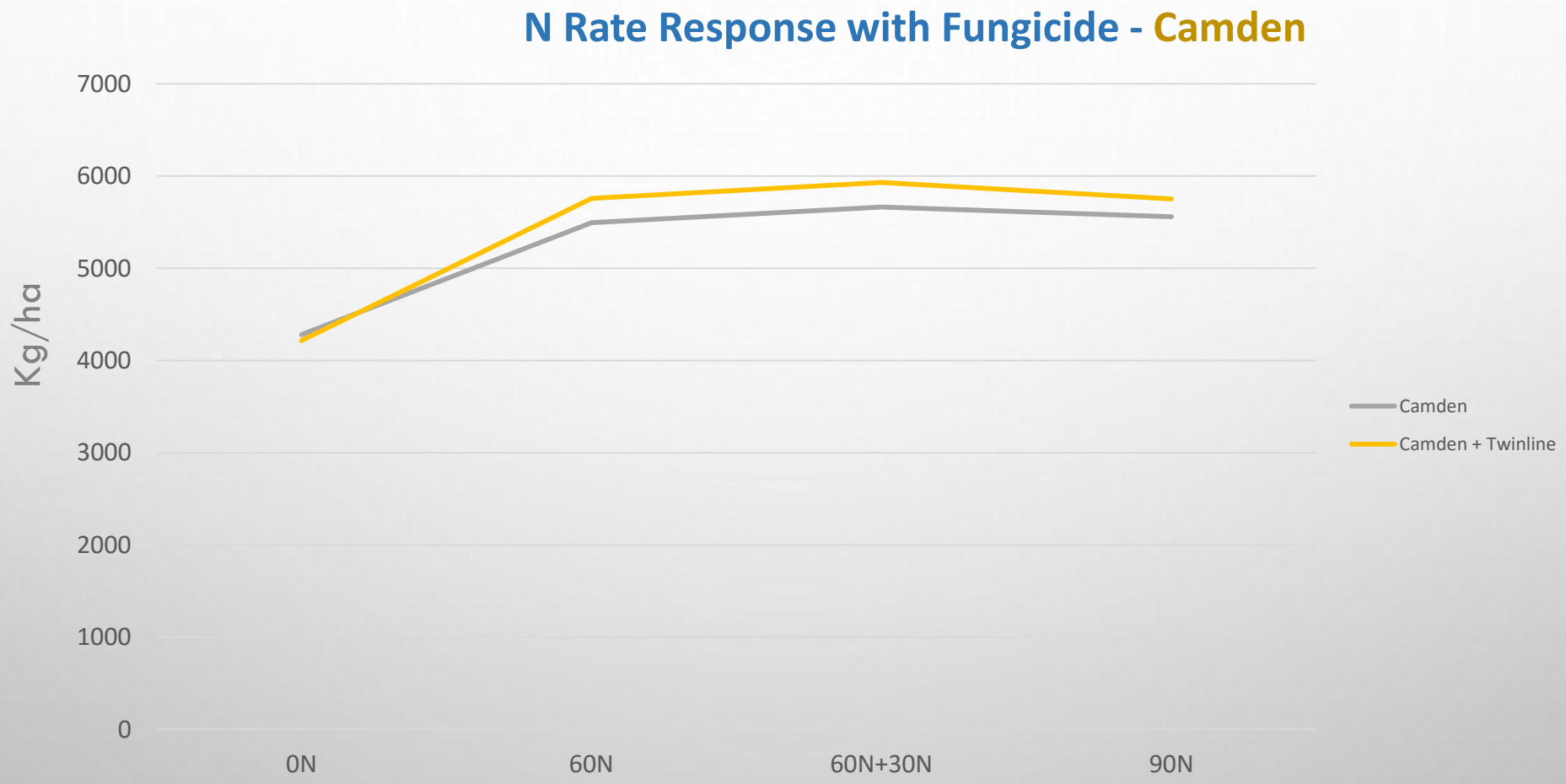
| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| ***Fungicide*** | | | | | | | | | |
| 0 None | 4915.9 | 35.4 | 46.0 | 11.2 | 96 | 4.5 | 3.6 | 65 | 94 |
| 1 Twinline | 5048.7 | 35.9 | 46.3 | 11.1 | 96 | 2.8 | 1.6 | 65 | 94 |
| Probability <= 0.05 | 0.0195 | 0.0000 | 0.0004 | 0.1666 | | | | | |

# Intensive Oat Management 2015

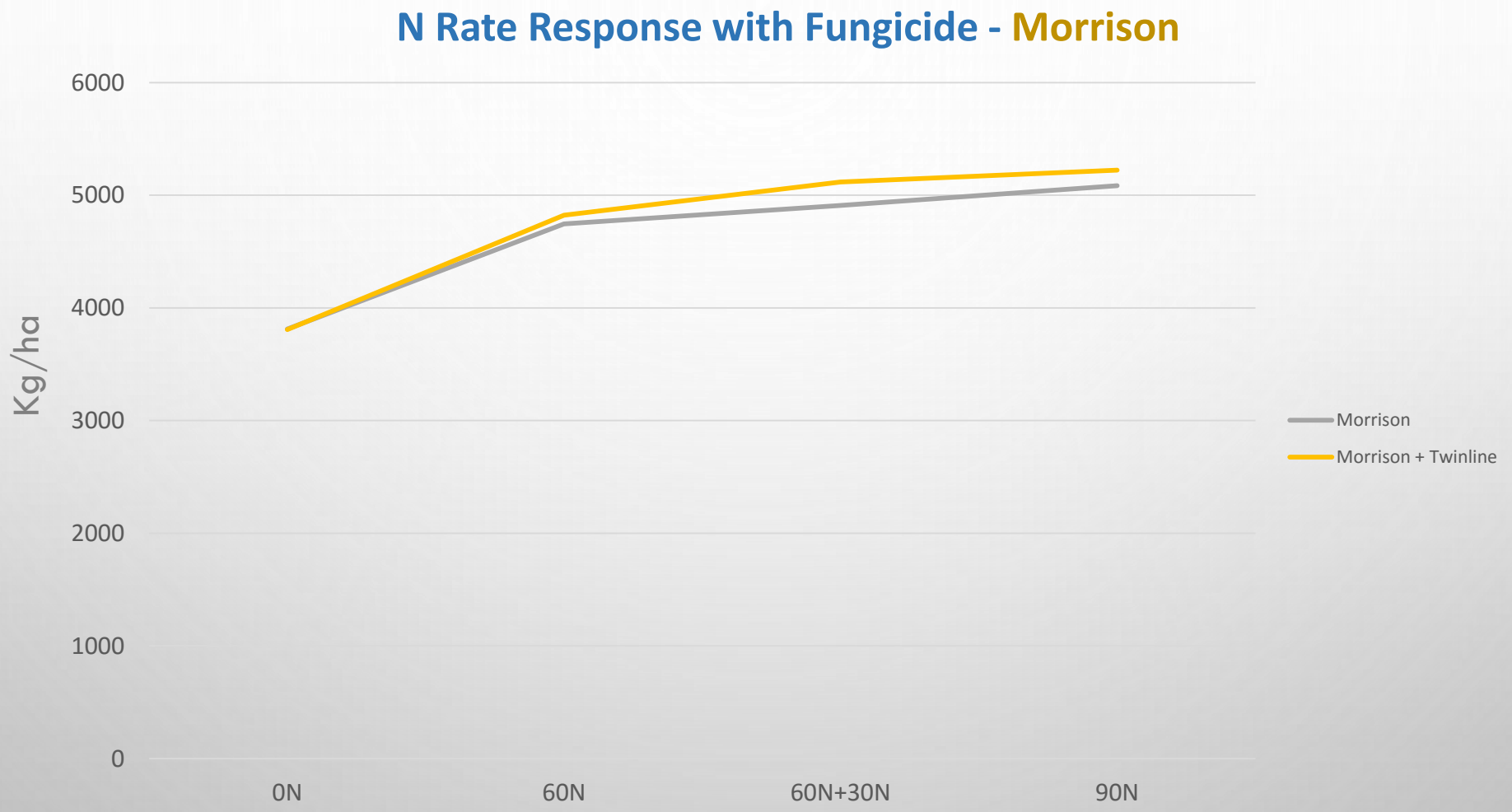
0N GR2 Twinline

60N + 30N @ Flagleaf

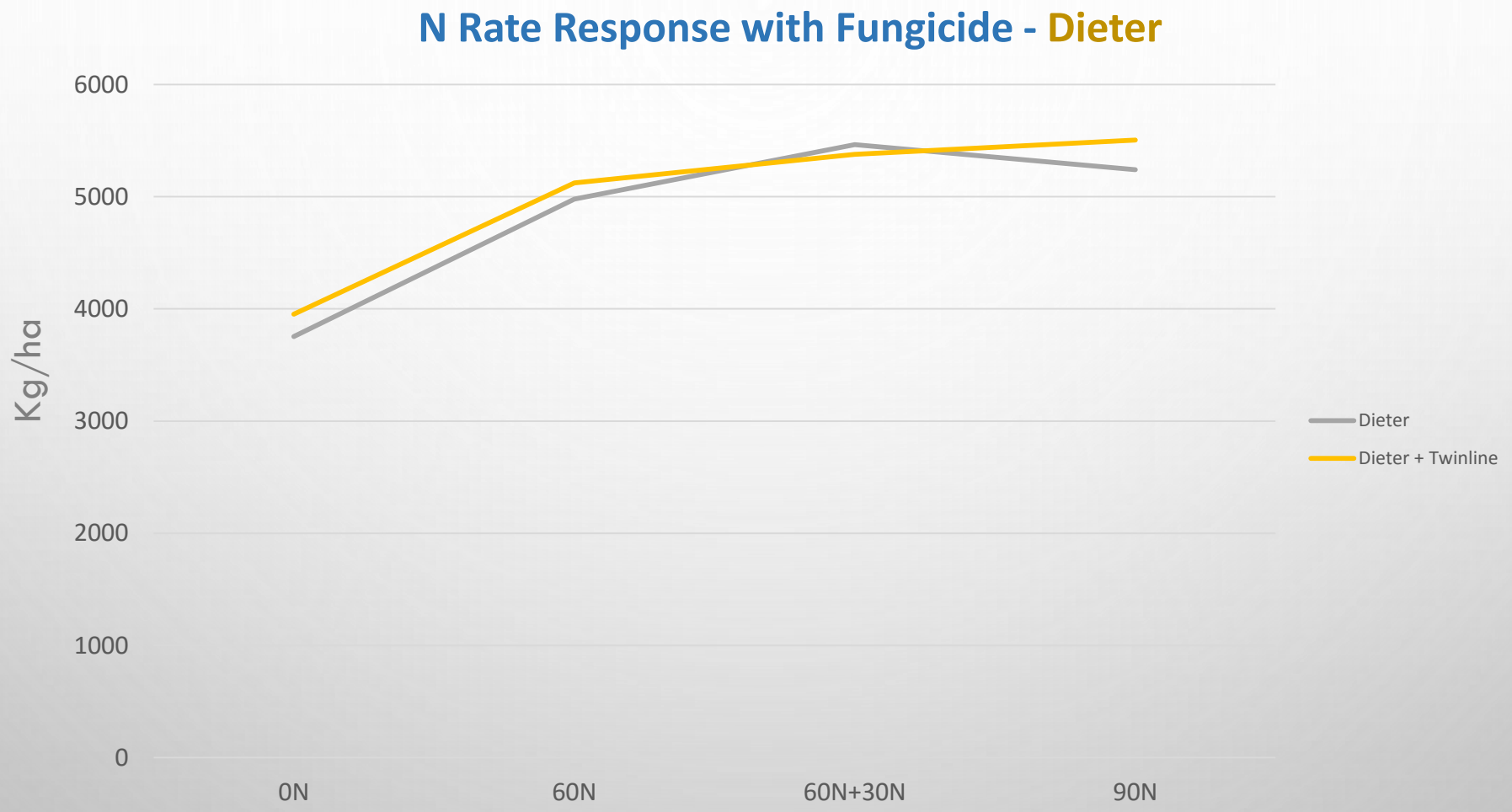
# Intensive Oat Management 2015



# Intensive Oat Management 2015



# Intensive Oat Management 2015



# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| ***Growth Regulator*** | | | | | | | | | |
| None | 4935.8 | 35.7 | 46.4 | 11.2 | 99 | 3.8 | 2.2 | 65 | 93 |
| GR1 - Palisade | 5024.8 | 35.9 | 46.1 | 11.1 | 93 | 3.5 | 2.6 | 65 | 94 |
| GR2 - Manipulator | 4986.3 | 35.4 | 46.0 | 11.2 | 95 | 3.7 | 3.1 | 65 | 94 |
| Probability <= 0.05 | nil | 0.0000 | nil | nil | | | | | |

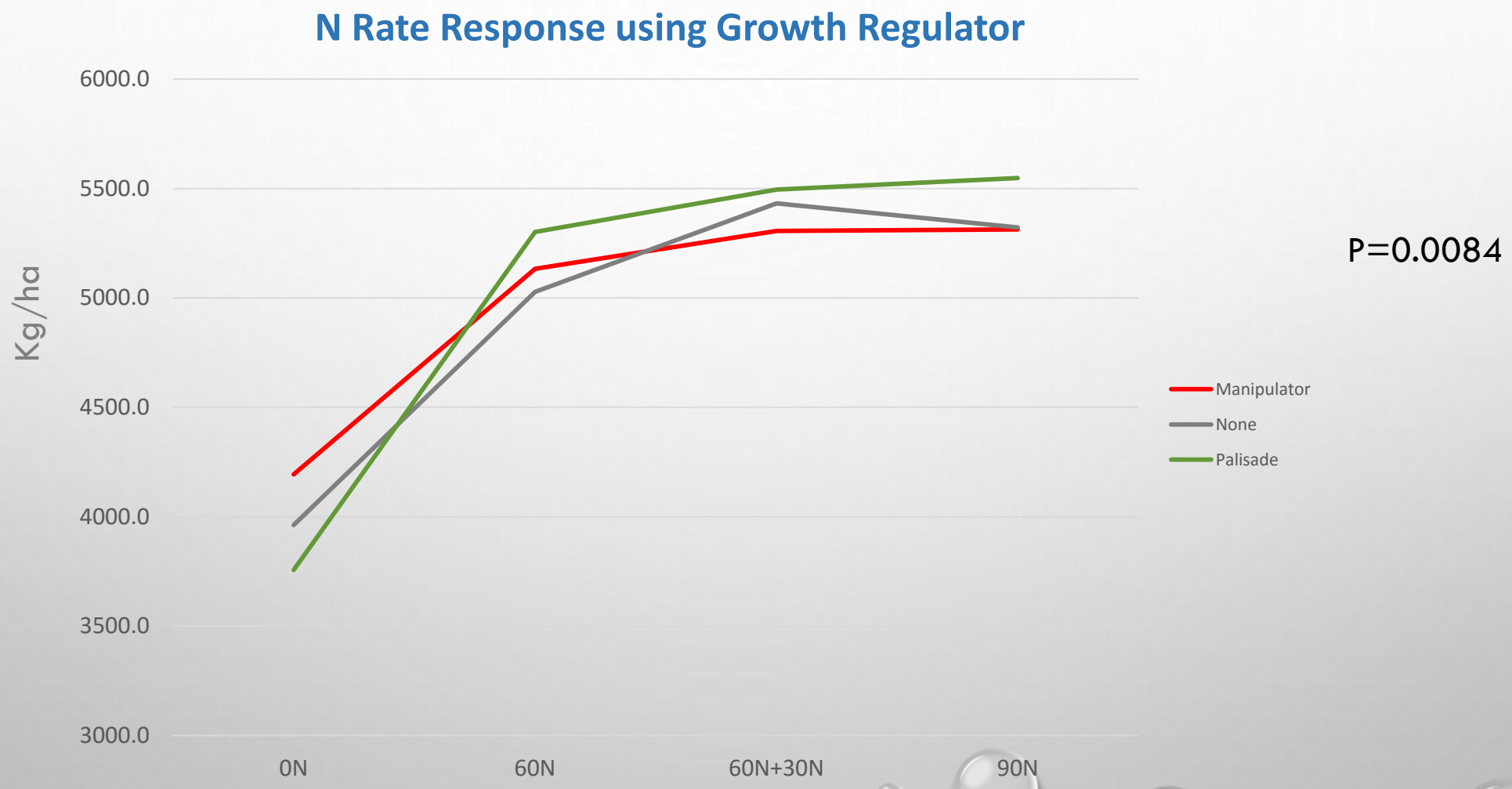
# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| *Probabilies < 0.05* | | | | | | | | | |
| ***Variety (A)*** | 0.0055 | 0.0003 | 0.0987 | 0.0111 | | | | | |
| ***N-Rate (B)*** | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | | |
| ***Variety x N-Rate (AB)*** | 0.2298 | 0.0000 | 0.0214 | 0.0822 | | | | | |
| ***Fungicide (C)*** | 0.0195 | 0.0000 | 0.0004 | 0.1666 | | | | | |
| ***Variety x Fungicide (AC)*** | nil | 0.0016 | nil | nil | | | | | |
| ***N-Rate X Fungicide (BC)*** | nil | 0.1096 | nil | nil | | | | | |
| ***Variety x N-Rate x Fungicide (ABC)*** | nil | 0.3130 | nil | nil | | | | | |
| ***Growth Regulator (D)*** | nil | 0.0000 | nil | nil | | | | | |
| ***Variety x Growth Regulator (AD)*** | nil | 0.0002 | 0.0003 | 0.0277 | | | | | |
| ***N-Rate x Growth Regulator (BD)*** | 0.0084 | 0.3352 | 0.0025 | 0.0003 | | | | | |
| ***Variety x N-Rate x Growth Regulator (ABD)*** | nil | 0.4472 | 0.1155 | nil | | | | | |
| ***Fungicide x Growth Regulator (CD)*** | nil | 0.1364 | nil | nil | | | | | |
| ***Variety x Fungicide x Growth Regulator (ACD)*** | 0.0766 | 0.0776 | nil | nil | | | | | |
| ***N-Rate X Fungicide x Growth Regulator (BCD)*** | nil | 0.3902 | nil | 0.4265 | | | | | |
| ***Variety x N-Rate x Fungicide x Growth Reg (ABCD)*** | nil | 0.0327 | nil | nil | | | | | |

# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| ***N-Rate x Growth Regulator*** | | | | | | | | | |
| 10N x none | 3962.0 | 36.3 | 47.1 | 10.1 | 90 | 1.6 | 0.4 | 66 | 93 |
| 20N x Palisade | 3756.3 | 36.4 | 47.1 | 9.8 | 84 | 0.5 | 0.0 | 66 | 93 |
| 30N x Manipulator | 4193.6 | 35.6 | 46.4 | 10.5 | 87 | 1.1 | 0.4 | 66 | 94 |
| 160N x none | 5027.6 | 35.1 | 46.4 | 11.0 | 101 | 4.7 | 3.3 | 65 | 93 |
| 260N x Palisade | 5301.2 | 35.3 | 45.9 | 11.3 | 97 | 4.7 | 3.4 | 65 | 94 |
| 360N x Manipulator | 5132.9 | 34.7 | 46.1 | 10.9 | 98 | 4.3 | 3.3 | 65 | 93 |
| 160+30N x none | 5432.1 | 36.0 | 46.3 | 12.0 | 102 | 3.8 | 1.8 | 65 | 94 |
| 260+30N x Palisade | 5494.5 | 36.6 | 46.0 | 12.0 | 96 | 3.5 | 2.5 | 65 | 94 |
| 360+30N x Manipulator | 5305.7 | 36.2 | 46.0 | 11.9 | 97 | 3.6 | 3.1 | 65 | 94 |
| 190N x none | 5321.4 | 35.4 | 45.9 | 11.7 | 104 | 5.3 | 3.3 | 65 | 93 |
| 290N x Palisade | 5547.2 | 35.5 | 45.5 | 11.4 | 98 | 5.1 | 4.6 | 65 | 94 |
| 390N x Manipulator | 5313.1 | 35.0 | 45.4 | 11.5 | 98 | 5.6 | 5.4 | 65 | 94 |
| Probability <= 0.05 | 0.0084 | 0.3352 | 0.0025 | 0.0003 | | | | | |

# Intensive Oat Management 2015




P=0.0084

# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| *Probabilies < 0.05* | | | | | | | | | |
| ***Variety (A)*** | 0.0055 | 0.0003 | 0.0987 | 0.0111 | | | | | |
| ***N-Rate (B)*** | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | | |
| ***Variety x N-Rate (AB)*** | 0.2298 | 0.0000 | 0.0214 | 0.0822 | | | | | |
| ***Fungicide (C)*** | 0.0195 | 0.0000 | 0.0004 | 0.1666 | | | | | |
| ***Variety x Fungicide (AC)*** | nil | 0.0016 | nil | nil | | | | | |
| ***N-Rate X Fungicide (BC)*** | nil | 0.1096 | nil | nil | | | | | |
| ***Variety x N-Rate x Fungicide (ABC)*** | nil | 0.3130 | nil | nil | | | | | |
| ***Growth Regulator (D)*** | nil | 0.0000 | nil | nil | | | | | |
| ***Variety x Growth Regulator (AD)*** | nil | 0.0002 | 0.0003 | 0.0277 | | | | | |
| ***N-Rate x Growth Regulator (BD)*** | 0.0084 | 0.3352 | 0.0025 | 0.0003 | | | | | |
| ***Variety x N-Rate x Growth Regulator (ABD)*** | nil | 0.4472 | 0.1155 | nil | | | | | |
| ***Fungicide x Growth Regulator (CD)*** | nil | 0.1364 | nil | nil | | | | | |
| ***Variety x Fungicide x Growth Regulator (ACD)*** | 0.0766 | 0.0776 | nil | nil | | | | | |
| ***N-Rate X Fungicide x Growth Regulator (BCD)*** | nil | 0.3902 | nil | 0.4265 | | | | | |
| ***Variety x N-Rate x Fungicide x Growth Reg (ABCD)*** | nil | 0.0327 | nil | nil | | | | | |

# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| ***Variety x Fungicide x Growth Regulator*** | | | | | | | | | |
| Dieter x None x None | 4697.4 | 36.5 | 46.5 | 11.2 | 110 | 5.8 | 0.7 | 65 | 96 |
| Dieter x None x GR1 - Palisade | 5021.5 | 36.5 | 46.8 | 10.8 | 104 | 5.6 | 3.3 | 65 | 96 |
| Dieter x None x GR2 - Manipulator | 4858.5 | 36.1 | 46.4 | 10.8 | 104 | 5.5 | 4.0 | 65 | 96 |
| Dieter x Twinline x None | 5048.2 | 36.7 | 47.0 | 11.0 | 110 | 5.6 | 2.5 | 65 | 96 |
| Dieter x Twinline x GR1 - Palisade | 4955.5 | 36.7 | 47.0 | 10.6 | 103 | 4.9 | 2.7 | 65 | 96 |
| Dieter x Twinline x GR2 - Manipulator | 4963.7 | 36.3 | 46.8 | 10.9 | 105 | 5.9 | 4.0 | 65 | 96 |
| Morrison x None x None | 4460.0 | 33.0 | 46.9 | 11.6 | 91 | 3.7 | 3.9 | 65 | 88 |
| Morrison x None x GR1 - Palisade | 4765.5 | 33.0 | 46.2 | 11.9 | 89 | 4.8 | 4.5 | 65 | 89 |
| Morrison x None x GR2 - Manipulator | 4689.4 | 32.7 | 46.4 | 11.8 | 91 | 3.6 | 3.3 | 65 | 89 |
| Morrison x Twinline x None | 4779.0 | 33.9 | 47.2 | 11.6 | 92 | 2.1 | 0.7 | 65 | 89 |
| Morrison x Twinline x GR1 - Palisade | 4734.7 | 33.3 | 46.6 | 11.6 | 87 | 1.3 | 0.9 | 65 | 89 |
| Morrison x Twinline x GR2 - Manipulator | 4714.7 | 32.3 | 47.0 | 11.5 | 90 | 2.5 | 2.3 | 65 | 89 |
| Camden x None x None | 5316.1 | 36.5 | 45.3 | 11.0 | 96 | 4.2 | 4.4 | 65 | 96 |
| Camden x None x GR1 - Palisade | 5107.0 | 37.7 | 45.0 | 10.8 | 89 | 3.4 | 3.8 | 65 | 96 |
| Camden x None x GR2 - Manipulator | 5327.3 | 36.8 | 44.5 | 11.2 | 90 | 3.8 | 4.5 | 65 | 96 |
| Camden x Twinline x None | 5314.1 | 37.7 | 45.7 | 10.9 | 96 | 1.8 | 0.9 | 65 | 96 |
| Camden x Twinline x GR1 - Palisade | 5564.7 | 38.4 | 45.0 | 11.0 | 88 | 0.8 | 0.7 | 65 | 96 |
| Camden x Twinline x GR2 - Manipulator | 5364.2 | 38.0 | 44.7 | 11.1 | 89 | 0.6 | 0.3 | 65 | 96 |
| | 0.0766 | 0.0776 | nil | nil | | | | | |

# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| *Probabilies < 0.05* | | | | | | | | | |
| ***Variety (A)*** | 0.0055 | 0.0003 | 0.0987 | 0.0111 | | | | | |
| ***N-Rate (B)*** | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | | |
| ***Variety x N-Rate (AB)*** | 0.2298 | 0.0000 | 0.0214 | 0.0822 | | | | | |
| ***Fungicide (C)*** | 0.0195 | 0.0000 | 0.0004 | 0.1666 | | | | | |
| ***Variety x Fungicide (AC)*** | nil | 0.0016 | nil | nil | | | | | |
| ***N-Rate X Fungicide (BC)*** | nil | 0.1096 | nil | nil | | | | | |
| ***Variety x N-Rate x Fungicide (ABC)*** | nil | 0.3130 | nil | nil | | | | | |
| ***Growth Regulator (D)*** | nil | 0.0000 | nil | nil | | | | | |
| ***Variety x Growth Regulator (AD)*** | nil | 0.0002 | 0.0003 | 0.0277 | | | | | |
| ***N-Rate x Growth Regulator (BD)*** | 0.0084 | 0.3352 | 0.0025 | 0.0003 | | | | | |
| ***Variety x N-Rate x Growth Regulator (ABD)*** | nil | 0.4472 | 0.1155 | nil | | | | | |
| ***Fungicide x Growth Regulator (CD)*** | nil | 0.1364 | nil | nil | | | | | |
| ***Variety x Fungicide x Growth Regulator (ACD)*** | 0.0766 | 0.0776 | nil | nil | | | | | |
| ***N-Rate X Fungicide x Growth Regulator (BCD)*** | nil | 0.3902 | nil | 0.4265 | | | | | |
| ***Variety x N-Rate x Fungicide x Growth Reg (ABCD)*** | nil | 0.0327 | nil | nil | | | | | |

# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| ***Variety x N-Rate x Fungicide x Growth Regulator*** | | | | | | | | | |
| Dieter x 0N x None x None | 3870.2 | 37.5 | 47.6 | 10.2 | 95 | 3.0 | 0.0 | 66 | 96 |
| Dieter x 0N x None x GR1 - Palisade | 3810.2 | 37.1 | 47.8 | 9.6 | 87 | 1.0 | 0.0 | 67 | 96 |
| Dieter x 0N x None x GR2 - Manipulator | 3583.0 | 36.5 | 47.1 | 9.8 | 89 | 1.0 | 0.0 | 67 | 96 |
| Dieter x 0N x Twinline x None | 3966.2 | 36.8 | 47.4 | 10.1 | 97 | 3.0 | 0.0 | 66 | 96 |
| Dieter x 0N x Twinline x GR1 - Palisade | 3809.0 | 36.8 | 47.4 | 9.7 | 92 | 2.0 | 0.0 | 66 | 96 |
| Dieter x 0N x Twinline x GR2 - Manipulator | 4080.0 | 36.3 | 47.1 | 10.1 | 94 | 2.7 | 0.0 | 67 | 96 |
| Dieter x 60N x None x None | 4794.2 | 36.4 | 46.5 | 10.8 | 111 | 6.7 | 2.7 | 65 | 96 |
| Dieter x 60N x None x GR1 - Palisade | 5133.4 | 36.1 | 46.5 | 10.9 | 113 | 7.3 | 2.7 | 65 | 96 |
| Dieter x 60N x None x GR2 - Manipulator | 5005.4 | 34.9 | 46.3 | 10.7 | 108 | 7.0 | 5.3 | 65 | 96 |
| Dieter x 60N x Twinline x None | 5159.5 | 36.3 | 47.1 | 10.8 | 112 | 6.7 | 5.0 | 65 | 96 |
| Dieter x 60N x Twinline x GR1 - Palisade | 5018.7 | 36.6 | 47.3 | 10.3 | 104 | 5.7 | 2.7 | 65 | 96 |
| Dieter x 60N x Twinline x GR2 - Manipulator | 5191.2 | 36.0 | 47.1 | 10.4 | 109 | 7.0 | 5.3 | 65 | 96 |
| Dieter x 60+30N x None x None | 5246.2 | 35.7 | 46.1 | 11.8 | 111 | 6.3 | 0.0 | 65 | 96 |
| Dieter x 60+30N x None x GR1 - Palisade | 5614.6 | 35.9 | 46.3 | 11.5 | 109 | 7.0 | 5.3 | 65 | 96 |
| Dieter x 60+30N x None x GR2 - Manipulator | 5533.2 | 36.7 | 46.1 | 11.3 | 109 | 7.0 | 5.3 | 65 | 96 |
| Dieter x 60+30N x Twinline x None | 5406.1 | 36.7 | 46.6 | 11.8 | 116 | 6.7 | 2.7 | 65 | 96 |
| Dieter x 60+30N x Twinline x GR1 - Palisade | 5408.4 | 37.4 | 47.0 | 11.4 | 106 | 5.0 | 2.7 | 65 | 96 |
| Dieter x 60+30N x Twinline x GR2 - Manipulator | 5318.7 | 36.4 | 46.6 | 11.7 | 109 | 7.0 | 5.3 | 65 | 96 |
| Dieter x 90N x None x None | 4878.9 | 36.3 | 45.7 | 12.1 | 122 | 7.0 | 0.0 | 65 | 96 |
| Dieter x 90N x None x GR1 - Palisade | 5527.7 | 37.0 | 46.5 | 11.1 | 109 | 7.0 | 5.3 | 65 | 96 |
| Dieter x 90N x None x GR2 - Manipulator | 5312.4 | 36.3 | 46.2 | 11.3 | 109 | 7.0 | 5.3 | 65 | 96 |
| Dieter x 90N x Twinline x None | 5660.9 | 36.9 | 46.7 | 11.4 | 116 | 6.0 | 2.3 | 65 | 96 |
| Dieter x 90N x Twinline x GR1 - Palisade | 5585.7 | 36.1 | 46.3 | 11.2 | 110 | 7.0 | 5.3 | 65 | 96 |
| Dieter x 90N x Twinline x GR2 - Manipulator | 5265.0 | 36.5 | 46.5 | 11.4 | 108 | 7.0 | 5.3 | 65 | 96 |

# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| Morrison x 0N x None x None | 3463.2 | 33.8 | 47.7 | 10.2 | 82 | 0.3 | 0.0 | 66 | 88 |
| Morrison x 0N x None x GR1 - Palisade | 3534.8 | 33.5 | 47.9 | 10.1 | 82 | 0.0 | 0.0 | 65 | 88 |
| Morrison x 0N x None x GR2 - Manipulator | 4438.6 | 33.2 | 46.7 | 11.5 | 88 | 0.7 | 0.0 | 65 | 89 |
| Morrison x 0N x Twinline x None | 3886.5 | 34.5 | 47.6 | 10.4 | 89 | 0.3 | 0.0 | 66 | 88 |
| Morrison x 0N x Twinline x GR1 - Palisade | 3452.0 | 33.9 | 47.4 | 10.2 | 78 | 0.0 | 0.0 | 66 | 88 |
| Morrison x 0N x Twinline x GR2 - Manipulator | 4085.5 | 33.0 | 47.7 | 10.5 | 83 | 0.0 | 0.0 | 65 | 89 |
| Morrison x 60N x None x None | 4503.9 | 32.5 | 47.1 | 11.4 | 92 | 4.7 | 5.3 | 65 | 88 |
| Morrison x 60N x None x GR1 - Palisade | 5071.1 | 32.3 | 46.0 | 12.5 | 88 | 6.0 | 6.0 | 65 | 89 |
| Morrison x 60N x None x GR2 - Manipulator | 4664.9 | 32.4 | 46.6 | 11.3 | 93 | 4.3 | 2.7 | 65 | 88 |
| Morrison x 60N x Twinline x None | 4808.8 | 33.4 | 47.0 | 11.3 | 92 | 2.7 | 0.0 | 65 | 88 |
| Morrison x 60N x Twinline x GR1 - Palisade | 5000.1 | 32.5 | 46.8 | 11.6 | 92 | 1.7 | 1.3 | 65 | 89 |
| Morrison x 60N x Twinline x GR2 - Manipulator | 4657.6 | 31.8 | 47.2 | 11.2 | 94 | 3.3 | 1.3 | 65 | 88 |
| Morrison x 60+30N x None x None | 4919.1 | 33.3 | 46.7 | 12.6 | 96 | 4.7 | 5.3 | 65 | 89 |
| Morrison x 60+30N x None x GR1 - Palisade | 5052.4 | 33.3 | 45.4 | 12.7 | 90 | 6.3 | 4.3 | 65 | 90 |
| Morrison x 60+30N x None x GR2 - Manipulator | 4758.5 | 33.1 | 46.4 | 12.5 | 92 | 4.7 | 5.3 | 65 | 89 |
| Morrison x 60+30N x Twinline x None | 5169.8 | 34.1 | 47.3 | 12.6 | 93 | 1.3 | 0.0 | 65 | 90 |
| Morrison x 60+30N x Twinline x GR1 - Palisade | 5207.6 | 33.7 | 46.2 | 12.7 | 88 | 0.3 | 0.0 | 65 | 89 |
| Morrison x 60+30N x Twinline x GR2 - Manipulator | 4974.0 | 32.4 | 46.7 | 12.4 | 89 | 0.0 | 0.0 | 65 | 90 |
| Morrison x 90N x None x None | 4953.7 | 32.2 | 46.1 | 12.2 | 94 | 5.0 | 5.0 | 65 | 88 |
| Morrison x 90N x None x GR1 - Palisade | 5403.9 | 33.0 | 45.7 | 12.1 | 95 | 6.7 | 7.7 | 65 | 89 |
| Morrison x 90N x None x GR2 - Manipulator | 4895.8 | 32.1 | 46.0 | 11.8 | 90 | 4.7 | 5.3 | 65 | 88 |
| Morrison x 90N x Twinline x None | 5250.7 | 33.6 | 46.9 | 11.9 | 95 | 4.0 | 2.7 | 65 | 88 |
| Morrison x 90N x Twinline x GR1 - Palisade | 5279.2 | 33.2 | 46.0 | 11.9 | 90 | 3.0 | 2.3 | 65 | 89 |
| Morrison x 90N x Twinline x GR2 - Manipulator | 5141.5 | 32.1 | 46.3 | 12.0 | 95 | 6.7 | 7.7 | 65 | 89 |

# Intensive Oat Management 2015

| Treatment | Yield | Kernel Wt | Test Wt. | Protein | Height | Lodging | Stem Break | Heading | Maturity |
|---|---|---|---|---|---|---|---|---|---|
| | kg/ha | g/1000 | kg/hl | % | cm | 0-9 | 0-9 | Days | Days |
| Camden x 0N x None x None | 4426.3 | 36.8 | 44.8 | 10.7 | 83 | 2.3 | 2.7 | 66 | 96 |
| Camden x 0N x None x GR1 - Palisade | 3851.9 | 38.4 | 45.9 | 9.6 | 82 | 0.0 | 0.0 | 66 | 96 |
| Camden x 0N x None x GR2 - Manipulator | 4426.3 | 36.8 | 44.8 | 10.7 | 83 | 2.3 | 2.7 | 66 | 96 |
| Camden x 0N x Twinline x None | 4022.6 | 37.6 | 46.5 | 9.8 | 86 | 0.7 | 0.0 | 66 | 96 |
| Camden x 0N x Twinline x GR1 - Palisade | 4079.8 | 38.5 | 46.1 | 9.6 | 81 | 0.0 | 0.0 | 67 | 96 |
| Camden x 0N x Twinline x GR2 - Manipulator | 4547.9 | 37.5 | 44.8 | 10.6 | 85 | 0.0 | 0.0 | 66 | 96 |
| Camden x 60N x None x None | 5325.9 | 35.3 | 45.2 | 10.8 | 97 | 4.7 | 5.3 | 65 | 96 |
| Camden x 60N x None x GR1 - Palisade | 5569.9 | 36.3 | 44.2 | 11.1 | 91 | 5.3 | 5.3 | 65 | 96 |
| Camden x 60N x None x GR2 - Manipulator | 5592.6 | 36.1 | 44.9 | 11.2 | 93 | 4.0 | 5.0 | 65 | 96 |
| Camden x 60N x Twinline x None | 5573.4 | 36.6 | 45.6 | 11.0 | 104 | 2.7 | 1.3 | 65 | 96 |
| Camden x 60N x Twinline x GR1 - Palisade | 6014.1 | 38.2 | 44.6 | 11.5 | 92 | 2.3 | 2.7 | 65 | 96 |
| Camden x 60N x Twinline x GR2 - Manipulator | 5686.0 | 37.1 | 44.8 | 10.6 | 92 | 0.3 | 0.0 | 65 | 96 |
| Camden x 60+30N x None x None | 5942.7 | 36.9 | 45.6 | 11.4 | 97 | 3.3 | 2.7 | 65 | 96 |
| Camden x 60+30N x None x GR1 - Palisade | 5389.6 | 40.0 | 45.8 | 11.7 | 91 | 2.3 | 2.7 | 65 | 96 |
| Camden x 60+30N x None x GR2 - Manipulator | 5665.0 | 38.4 | 44.9 | 11.6 | 92 | 2.7 | 2.7 | 65 | 96 |
| Camden x 60+30N x Twinline x None | 5908.6 | 39.5 | 45.6 | 11.6 | 98 | 0.3 | 0.0 | 65 | 96 |
| Camden x 60+30N x Twinline x GR1 - Palisade | 6294.4 | 39.2 | 45.2 | 11.8 | 90 | 0.0 | 0.0 | 65 | 96 |
| Camden x 60+30N x Twinline x GR2 - Manipulator | 5584.5 | 40.1 | 45.3 | 11.7 | 89 | 0.3 | 0.0 | 65 | 96 |
| Camden x 90N x None x None | 5432.4 | 36.3 | 44.8 | 11.5 | 98 | 6.3 | 7.3 | 65 | 96 |
| Camden x 90N x None x GR1 - Palisade | 5616.7 | 36.1 | 44.2 | 11.1 | 92 | 6.0 | 7.0 | 65 | 96 |
| Camden x 90N x None x GR2 - Manipulator | 5625.5 | 35.8 | 43.4 | 11.4 | 93 | 6.3 | 7.7 | 65 | 96 |
| Camden x 90N x Twinline x None | 5751.9 | 37.0 | 45.0 | 11.1 | 97 | 3.7 | 2.3 | 65 | 96 |
| Camden x 90N x Twinline x GR1 - Palisade | 5870.4 | 37.6 | 44.3 | 11.1 | 90 | 1.0 | 0.0 | 65 | 96 |
| Camden x 90N x Twinline x GR2 - Manipulator | 5638.2 | 37.3 | 44.0 | 11.3 | 90 | 1.7 | 1.0 | 65 | 96 |

# Intensive Oat Management 2015

## Summary

- Response to N

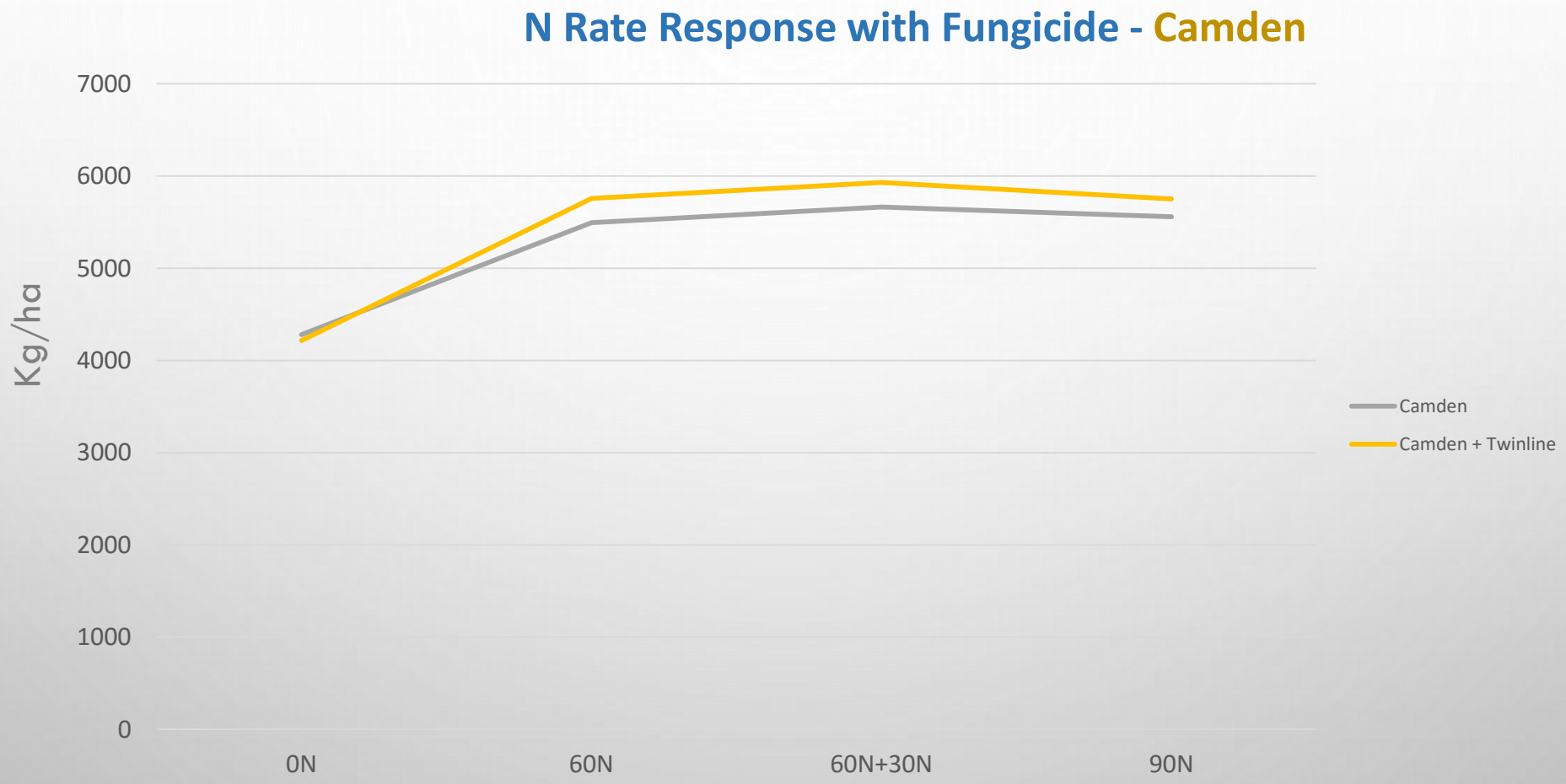
# Intensive Oat Management 2015

# Intensive Oat Management 2015

## Summary

- Response to N
- Response to the having Twinline Fungicide

# Intensive Oat Management 2015

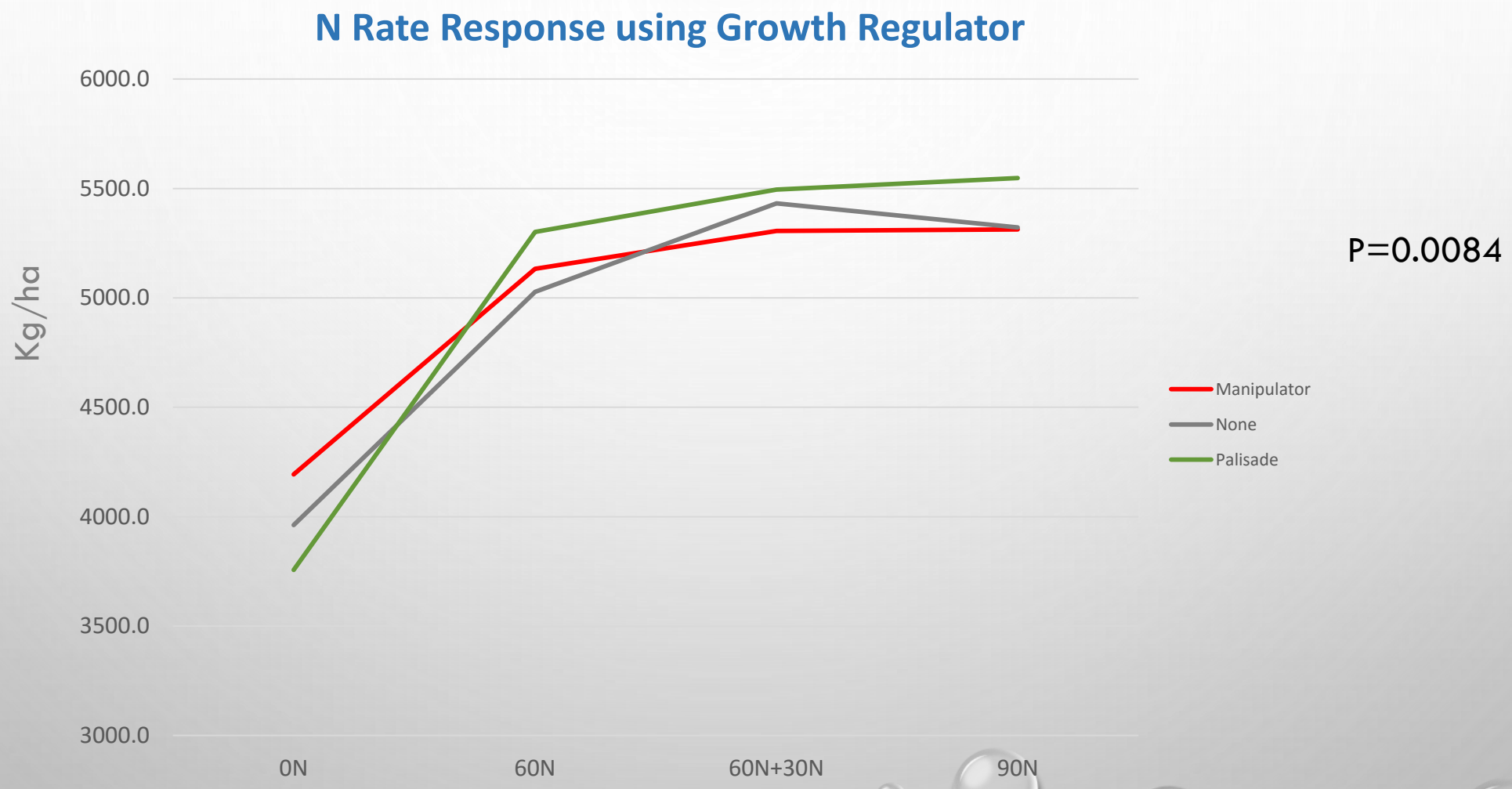


# Intensive Oat Management 2015

## Summary

- Response to N
- Response to the having Twinline Fungicide
- Seeding date was 14-May-2015 – we need to seed earlier

# Intensive Oat Management 2015

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# Intensive Oat Management 2015

## Summary

- Response to N
- Response to the having Twinline Fungicide
- Seeding date was 14-May-2015 – we need to seed earlier
- Effects of growth regulators were minimal – no significant lodging

# Intensive Oat Management 2015

# Intensive Oat Management 2015

Northern Ontario Farm Innovation Alliance

QUAKER

BASF
We create chemistry

University of Guelph
Changing Lives Improving Life

Grain Farmers of Ontario

ENGAGE AGRO

syngenta

CANTERRA SEEDS

SeCan
Canada's Seed Partner